

DOES WOMEN'S REPRESENTATION IN LOCAL WATER MANAGEMENT LEAD TO BETTER MEETING WOMEN'S DOMESTIC WATER NEEDS?

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Abstract

This paper focuses on the interface between gender roles in water provision and use at household and community level and its relationship with women's practical and strategic gender needs. Data were collected in nine villages in the districts of Kondo and Mpwapwa, Dodoma region in Tanzania. Results have shown that women gain more knowledge on the appropriateness of water for consumptive and productive uses while pursuing their reproductive roles in the provision and use of domestic water at the household level. However, social-cultural context limit women's participation during designing and planning of water services at community level; ultimately their preferences and perceptions on the appropriateness of the domestic water are not integrated in the water projects. We recommend systematic analysis on the interdependence between women's domestic water needs, their involvement in community management and the bigger picture of gender roles in society.

Key Words: *Women's gender needs, household-community interfaces, local water management*

1. INTRODUCTION

Rural water supply started as technical and male domain sector; in which the differences on the roles of men and especially that of women were overlooked (Van Wijk-Sijbesma 1985, 1998; Harvey and Reed 2004; Singh 2008). The non-participatory approaches resulted in failures of many water projects due to institutional and managerial problems during 1970s and 1980s (Therkildsen 1988; Van Wijk-Sijbesma 1985, 1998). To address these failures there were global

initiatives, such as the resolutions of the two international decades¹ and Principle 3 of the 1992 Dublin Principles, which mandated women's involvement in local water committees (Van Wijk-Sijbesma 1985, 1998; ICWE 1992). Earlier mentioned initiatives from the 1970s through 1990s, marked major paradigmatic shifts in which the emphasis was on gender mainstreaming and integration and addressing the implications of water and sanitation interventions on men and women. The initiatives focused on the appropriate linkages between gender and sustainable management of rural water supply (Van Wijk-Sijbesma 1985, 1998; Harvey and Reed 2004; Singh 2008). Despite women's multiple roles (Kabeer 1994; Moser 1989, 1993) and responsibilities in domestic water provision and use, they did not have a voice in the decision-making on and management of rural water supplies (Van Wijk-Sijbesma 1985, 1998).

Following from a concern with women's lack of voice in rural water supply management, women have been integrated into local structures managing water management in Tanzania. Lack of voice can be subsumed under women's strategic gender needs (SGN), which are needs that originate from women's ideological subordination to men. They vary depending on the particular cultural and socio-political context within which they are formulated (Moser 1989: 1803). Practical gender needs (PGN) are the needs that arise from the concrete conditions women experience and are a response to immediate necessities that women identify within a specific context (Moser 1989: 1803). The integration of both women and men in community water management is considered vital because their gender roles and needs are different, dynamic and vary with time and across geographical locations (Van Wijk-Sijbesma 1985, 1998; Sever, 2005). Changes that occur at community level may also affect gender roles and needs in the household. Similarly, changes in domestic practices may have repercussions for women's representation in the community.

Literature on gender and the intra-household organisation of reproductive and productive roles indicates a gendered division of labour in provision and uses of domestic water (Van Wijk-Sijbesma 1985, 1998; Kabeer 1994; Van Koppen 2001; Gleitsmann *et al.* 2007). The division of labour is influenced by household characteristics, intra and extra household relationships, and is embedded in social-cultural structures (Kabeer 1994; Thompson *et al.* 2001; Gleitsmann *et al.* 2007). Domestic water management consists of many activities in which men and women have different responsibilities and revolve round questions regarding

¹ International Drinking Water Supply and Sanitation Decade (IDWSSD, 1981-1990) and United Nations Decade for Women (1976-1985)

fetching, managing and using water as well as paying for water. The answers to these questions are found in arrangements that are based on domestic routines, negotiations and – to a certain extent – cooperation in the provision and use of domestic water (Agarwal 1994; Kabeer 1994). Recognizing the hegemonic nature of routines and the difficulty of changing this, women in northern Burkina Faso refused to marry anymore into villages with severe water scarcity, because the burden of water provision would not be shared and this would lead to quarrelling between the spouses². Most studies indeed indicate that it is women who are primarily involved in provision and uses of domestic water at the household level. “They [women] decide which water sources to use for various purposes, how much water to use, and how to transport and draw the water (Van Wijk-Sijbesma 1998: 41).”

Studies investigating gender and local water management tend to highlight changes in the management of water resources and services at the community level. These studies emanate from a policy emphasis on women’s SGN for participation in local water management structures. This reflects an implicit recognition of the PGN of women, for whom accessible domestic water is vital for carrying out their reproductive roles. However, little is known about how women’s representation in local water management, whether this indeed addresses their SGN or not, in fact translates into meeting their PGN. Having women in the Village Water Committees (VWCs) is one thing, but what they can achieve in a given socio-cultural context is another (Cleaver 1998; Hemson 2002; Rao and Kelleher 2005). Understanding this is crucial for gender-sensitive rural water supply policy and planning.

Even though there is ample research on the household and the community regarding the gendered nature of water use and management, the interface between the two arenas in this respect is not well documented. On the one hand, the different responsibilities of men and women in the household also affect their involvement in decision-making and management of public water facilities (Gleitsmann *et al.* 2007; Bhandari and Grant 2009). On the other hand, it can be hypothesized that different gender roles and responsibilities in the community will affect gendered water arrangements in the domestic arena. This paper focuses on the interface between gender roles in water provision and use at household and community level and its relationship with women’s practical and strategic gender roles.

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2. HOUSEHOLD, GENDER AND DOMESTIC WATER: INTERWOVEN COMPLEXITIES

The household is the arena within which people provide and manage resources for their daily needs, including water (Rudie 1995; Niehof 2004, 2011). For the “empirical significance of household relationships in the daily management of resource entitlements, and as the routine context of people’s lives”, Kabeer (1994: 114) coined the term ‘facticity’. Included in this facticity is the gendered nature of these household relationships, of the household division of labour, and of the distribution of power and benefits (Evans 1991; Kabeer 1991; Agarwal 1997). Thus, household, gender and water are, as the title of this section indicates, interwoven complexities.

In conceptualising the household, the balance between seeing it as a unit of production and consumption continually shifts, depending on context and through time. In seeing the household as geared towards providing for the daily needs and well-being of its members (Wilk 1989; Rudie 1995; Kabeer 1991; Niehof 2004), its productive functions are emphasized. With the emergence and growth of consumer society in large parts of the world, the household became framed as a unit of consumption with household members increasingly deriving their identity from consumption (Sassatelli 2007). In most policies on public services, including water services, the household is, implicitly or explicitly, considered a unit of consumption (Evans 1991). In our study, we see the household as the arena of everyday life in which resources for the provision and utilisation of domestic water are generated and managed (FAO 2004; Niehof 2011) and highlight the household’s productive role in enabling and enhancing domestic water consumption.

Water is indispensable for household livelihood activities and for safeguarding the health and hygiene of household members (FAO 2004). In this study, water provision at household level comprises paying user fees, and fetching, transporting, storage and in-house management of water. Domestic water uses include reproductive ones such as water for drinking, cooking, bathing, laundry, sanitary purposes and cleaning dishes and house premises, and productive uses such as livestock watering, brick making, food vending, brewing and vegetable gardening.

The gendered nature of household production plays a large role in the persistence of gender differences. As Rudie observed, the gender system in households may be resistant to change: “Households are the fields of interaction in which deep-

seated features of a gender system are reproduced through social practices” (Rudie 1995: 228). This also applies to water provision. This gendered understanding of responsibilities for water is shaped by social practices within the household, but also by outside developments, such as the representation of women in local water management.

Where, as in the study area and in many other parts of the world, women are responsible for the reproductive activities of cooking, cleaning and care, they are the primary domestic water users. Water for various domestic uses is mainly fetched, transported, stored and managed by women. These and other domestic responsibilities leave women little time to participate in community management (cf. Moser, 2003, on women’s triple role), which hampers addressing their SGN and meeting their PGN.

Women also make decisions on the appropriateness and allocation of water for specific needs. Such decisions should not be understood according to psychological or economic notions of individual decision-making. They are embedded in culture, including in trans-generational knowledge and women’s judgement of the convenience and social appropriateness of technologies (Elmendorf and Isely 1983; Van Wijk-Sijbesma 1985; 1998 Cleaver 1998; Gleitsmann *et al.* 2007).

The gender lens is essential for understanding the provision, use and in-house arrangements of domestic water (Seager 2010). Gender analysis has been employed in research and development planning to assess the role of gender and change gender relations in institutions (March *et al.* 1999). In this study, we combined the gender roles framework of Kabeer (1994) and Moser’s (1989, 2003) concepts of women’s practical and strategic gender needs. Kabeer’s framework constitutes a matrix of questions that focuses attention on gender divisions in production of goods, services and human resources as well as in access to and control over resources and benefits (Kabeer 1994: 271). This approach enabled us (i) to examine gendered patterns and their implications in ‘who does what and how’ in terms of obligations and efforts in the provision and uses of domestic water, (ii) to capture the local context of the gendered household-community i.e. private-public interfaces in schemes for domestic water provision and their social-cultural construction (see also March *et al.* 1999). Despite their relevance, gender analysis frameworks can have the following weaknesses: their application depends on objectivity of the user(s), they can confuse the issue when their application is politically motivated, and they are time consuming to apply. In applying a combined framework, we hope to have minimised these weaknesses.

Capturing the interface between the two arenas of water provision and use of the community and the household, both considered gendered arenas, requires an understanding of the household's social-economic characteristics and its linkage to the water services. Through the lens of the combined gender analysis framework and by using qualitative and quantitative methods, this paper presents micro level evidence on gender, household and domestic water.

3. METHODOLOGY

Data were collected from nine villages, in the districts of Kondoa and Mpwapwa. The villages were purposively selected based on: distance to the district headquarters, presence of a public water project, type of water source, and management arrangements. The water sources in the study area included improved and unimproved ones. Although each village had a water project, Seluka village was depending on traditional hand-dug wells and riverbed-sand wells for all water uses because its borehole had broken down. The other eight villages had functioning improved water sources. Five villages had boreholes, two had gravity schemes and one village had a shallow well. In the villages with the improved sources, unimproved sources such as riverbed-sand wells were used for laundry and cleaning dishes and house premises, and for the productive purposes of livestock watering and brick making.

Data collection methods included a household survey, Focus Group Discussions (FGDs), key informants interviews, observation, in-depth interviews with some villagers and case studies. In the survey, interviews were done in 221 randomly selected households. In almost all cases (218), the respondents were women. Although this is justified by women's pivotal role in domestic water management, to avoid a 'women's only' bias we collected men's views through qualitative data collection methods. The qualitative data yielded contextual details on gender roles in the provision of domestic water and on household arrangements in using water and coping with shortages.

To operationalize women's gender roles and needs, household domestic water management, and their interplay with the rural water schemes, we focused on the household division of labour, the accessibility of water in terms of distance to the water source, time spent on water provision, affordability of the user fee, household characteristics as well as appropriateness of the source in relation to water use. Users' perceptions of appropriateness were indicated by using a three-point scale from 'very appropriate', through 'appropriate' to 'not appropriate'. The other variables were addressed through the following questions: Who fetches water, for what uses, from which source and when? Who is paying for the user

fee? Who decides on water uses in the house? And, finally, it was asked how these practices are reflected and integrated in the planning of the rural water schemes.

4. RESULTS AND DISCUSSION

4.1 Household characteristics

About 188 of the households in the sample were male-headed and 33 were female-headed. There were a few de facto female household heads whose husbands were migrant workers. Household size ranged from two to ten, with a mean household size of 5.9. On average, the households had two to five children below the age of 18. The majority of the respondents were between 20 and 50 years old. The mean age was 37. Regarding education, 158 (72%) of the household heads had primary education, 47 (21%) had no formal education, four (2%) had adult education, and 12 (5%) had secondary education or higher. For 90 percent of the households farming was the major source of income, for the others it was livestock keeping, small-scale business, wage employment or handicraft. Regarding duration of stay in the village, 61 percent of the respondents had been living in their villages since birth, 30 percent for more than ten years and the remaining between five to ten years. Most respondents owned the house they lived, only four respondents were renting it. Only 42 houses could qualify as modern according to the classification of the National Bureau of Statistics (URT 2009), i.e. were made from concrete with a cemented floor and a corrugated iron sheet's roof. Many households (189) had toilets, built outside and separated from the main house. Fewer households (133) had a bathroom, for the others the toilet functioned as bathroom. When there is a bathroom, it is also a separate structure and has a concrete or an earth floor.

4.2 Household division of labour in provision and uses of domestic water

Provision of domestic water requires cash, labour and time. Contributions of these resources tend to be divided along gender lines, and the division differs according to cultural context (Van Wijk-Sijbesma 1985, 1998; Van Koppen 2001). As stated above, provision of domestic water in our context related to paying user fees, and fetching, transporting, storage and in-house management of water. The performance of these activities depends on the social-cultural construction of men's and women's roles and needs within the household.

Paying user fees: Our results show multiple arrangements for paying the user fee depending on the headship of the household. Of the 149 households that were paying user fees, 128 were male-headed and 21 were female-headed. Not paying user fees occurred because: (i) Sambwa village had a gravity scheme from which water was provided free of charge, (ii) Seluka village had a broken-down borehole, and (iii) in Mbori most of the villagers were not willing to pay the user fee and used a river as an alternative source because the improved source was incompatible to user's preferences. In the male-headed households, paying the user fee was a joint responsibility of the household head and his wife. Among the 128 male-headed households, the responsibility to pay the user fee was shared as follows: 94 (74%) household head 26 (20%) wife, and 8 (6%) both. In the female-headed households only the head was paying the user fee. It has to be noted that formally only the head of the household is held responsible for paying the user fee.

Fetching and transporting: The survey established that although all household members fetch water for domestic uses, it is predominantly done by women and girls. These observations corroborate findings from other African and Asian societies where drawing domestic water is a female domain (Van Wijk-Sijbesma 1985; 1998 Moriarty *et al.* 2004; Hadjer *et al.* 2005). However, the gender pattern differs between fetching water for reproductive and productive uses, as presented in Figure 1.

Figure 1: Proportions of the household members fetching water for reproductive and productive uses

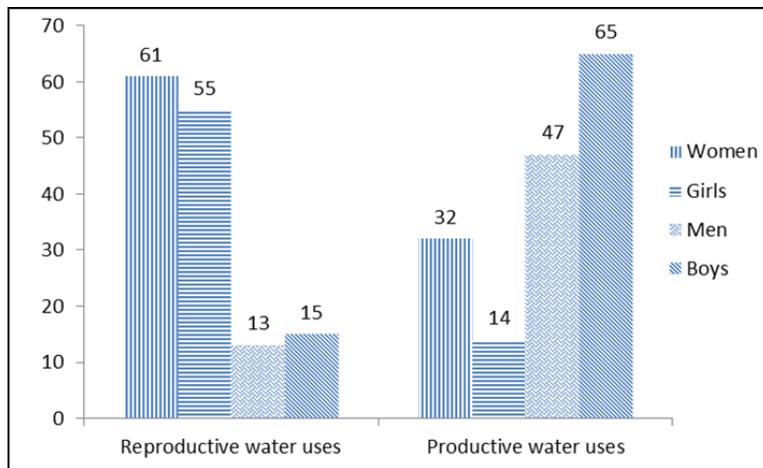


Figure 1 shows that women and girls predominate in fetching water for reproductive uses at the home, while boys and men fetch most of the water for productive uses, mainly livestock keeping and brick making. The latter activities were commonly carried out at the water source or close to it, entailing less of a collection effort. Women and girls featured in productive activities that were carried out in or around the house, such as brewing, food vending, and vegetable gardening. Mokgope and Butterworth (2001) also found that women's productive activities are usually confined to the homestead. Such arrangements enable women to participate in productive and reproductive roles concurrently (Moser 1989).

Gender, water fetching and modes of transporting water: As 143 (65%) respondents indicated, women and girls usually carry water containers from the source to their home on the head, 58 (26%) said they also used a bicycle. The rest were using other means, mainly bicycles and an oxen or donkey cart. The latter were used by a few households, particularly by men. This implies that for women and girls water collection entailed a much greater effort than for men, also considering that for 132 (60%) households the distance to the source was more than 400 meters and time expenditure was on average of 2:20 hours for a round trip. The collection effort in terms of time and distance is above the national standards of 400 meters and 30 minutes for household accessibility to water services (URT 2002, 2008, 2009).

We found a shift in the mode of water transporting among Maasai and Gogo men from livestock keeping households in Songambebe neighbourhood, Mkombozi subvillage, Kidoka village. Songambebe is about 6.4 kilometres away from the nearest DP. While survey data did not establish any significant relationship between the frequency of fetching water, distance to the nearest DP and occupation of the household head, FGD information revealed that some of the households whose major source of income is livestock keeping, fetch water only once to thrice a week. They use a donkey or oxen cart, or a tractor when they own or can afford to hire one. As Cleaver (1998) noted, the gender division of labour is not static but changes over time, but is negotiable and shaped by changes in the livelihood system.

In-house arrangements in reusing water and coping with shortage: We found a gendered pattern related to the in-house arrangements on reusing domestic water and in coping with water shortage. Domestic water was a major input that determined timing and prioritisation of domestic chores such as laundry, cleaning

dishes and house premises. Women in the FGDs revealed that domestic chores were organised by maximising on the possibility to reuse water remained from one use to the other. For example, they reused laundry water to clean the house premises and to settle dust in the houses with earth floors.

Another practice found in four villages was that women wear differently coloured *kitenge*³ and *kanga*⁴ during the rainy and dry season. The women in the villages said: “We normally wear dark colours vitenge and kanga during driest months of the year (October-November) and wear those with white and other light shades in the rainy season.” The major reason was shortage of water during the dry season to adequately rinse light colour fabrics and availability of rain water during the rainy season. The survey data also showed that about 60 percent of the respondents increased the amount of water for laundry during the rainy season. Several studies in Africa found an association between quantity of water, type of use and season, with an increase in the rainy season and a decrease in the dry season (Hadjer *et al.* 2005; Gleitsmann *et al.* 2007; Arouna and Dabbert 2010). Water for reproductive uses and for female productive uses such as brewing and food vending was commonly stored in the main house or kitchen in plastic buckets, jerrycans or other big containers. To prevent water from in-house contamination women ensured that the storage containers were covered.

Household characteristics and water uses: Household characteristics are among key factors in the delivery of public water services. We found that household size, headship and occupation of the household head determine the amount and type of water use. The survey revealed a strong correlation between household size and amount of water used on daily basis ($r= 0.553$; $p= 0.01$), as did other studies (Arouna and Dabbert 2010). Household headship was significantly associated water use ($p= 0.00$). Male-headed households were using 60 percent of the water for domestic purposes and 39 percent for the productive uses of bricks making and livestock watering. In female-headed households these percentages were 68 and 15, but these households used 17 percent of the water for food vending,

³ *Kitenge* is a piece of cloth that is decorated with a variety of colours and patterns; it is often worn by women around chest or waist, as a headscarf, as a baby-sling and has other uses related to personal care and as linen for house's interior decoration.

⁴ *Kanga* has very similar uses as the *kitenge* but is smaller and made of lighter material.

brewing and gardening. Occupation of the household head also had a significant influence ($p=0.00$) on type of water use.

4.3 Appropriateness of the water service to the household water uses

Water source and use tend to be linked (Van Wijk- Sijbesma 1985; 1998; Thompson *et al.* 2001; Mokgope and Butterworth 2001; Moriarty *et al.* 2004). The perceived water quality determines in what way water is used for reproductive and productive purposes. The literature on gender and development confirms that women are more knowledgeable and have more explicit preferences than men on the relationship between water source and water use (Elmendorf and Isely 1983; Van Wijk- Sijbesma 1985; 1998; Cleaver 1998; Hadjer *et al.* 2005). When available, women will draw water for consumption from improved sources due to perceived sensitivity of that use and the quality required for it. As Elmendorf and Isely already noted in 1983 (196-7): “Decisions about drinking water are often based on sensory or macroscopic perceptions on colour, taste, or smell, rather than microscopic qualities of technical purity.” Water for cleaning purposes is drawn from unimproved sources when the improved sources is either unavailable or less accessible due to non-functionality, distant location, long queues, or a user fee requirement.

To assess the appropriateness of the service to the users we distinguished two categories of appropriateness: (i) technical and managerial attributes of the water source, (ii) quality and sensory attributes. The first category comprises costs (user fee), distance to the source, water availability at the source, and reliability and quantity of water. The second is about taste, smell and colour (cf. Elmendorf and Isely 1983). As shown in Table 1, the survey established that users have different perceptions about the different aspects of the appropriateness of the water service in the study area.

Table 1: Users’ perception on the appropriateness of domestic water service (n= 221)

Attributes	Level of appropriateness			Total
	Very appropriate	Appropriate	Not appropriate	
Costs (user fee)	17 (8%)	79 (36%)	55 (25%)	149 (67%)
Distance to the source	28 (13%)	112 (51%)	81 (36%)	221 (100%)
Water quantity and reliability at the source	16 (7%)	105 (47%)	100 (45%)	221(100%)
Water availability at	18 (8%)	97 (44%)	106 (48%)	221 (100%)

the source				
Taste	38 (17%)	114 (52%)	69 (31%)	221 (100%)
Smell	45 (20%)	152 (69%)	24 (11%)	221 (100%)
Colour	40 (18%)	143 (65%)	38 (17%)	221 (100%)

In Table 1, the total of the responses in the user fee category is not 221 because not all households were paying a user fee because of the reasons mentioned in Section 4.2. Water availability, quantity and reliability were perceived not appropriate by more than 40 percent of the respondents. When we asked for clarification, it transpired that some of the DPs had no water and at others, the quantity of the water was less than expected. The results on the quality and preference attributes show that more than 50 percent of the respondents judged the water appropriate. However, about 69 respondents regarded the taste not appropriate because they preferred ‘soft’ water for laundry and bathing, and ‘soft and cold’ water for cooking especially for beans and tea. Because of its hardness, salty water requires more soap for laundry than with soft water which implies more costs to the household members. In addition, to have clean laundry from salty water one need to rinse clothes many times and ultimately their bright colours will fade. Other studies in African semi-arid areas corroborate our findings (Gleitsmann *et al.* 2007). According to Van Wijk- Sijbesma (1998), local people’s water quality perceptions are based on their indigenous knowledge and should be taken seriously during the implementation of water projects.

During fieldwork in Potea village in Kondoa district, we found women drawing water from unimproved sources, mainly hand-dug wells. They said that they were using the water for uses such as bathing, laundry, and cleaning dishes and the house premises. These uses fall under women’s PGN (Moser 1989; 1993). The major reasons given why they were using these sources were: distant location of the improved sources and the long queues there, convenience, and saving time for other domestic chores.

Unimproved water sources are unprotected. They may be contaminated and can ultimately threaten women’s and their household’s health. The providers rely on water policy frameworks in which the major criteria to position domestic water points are 250 targeted households and a distance of less than 400 metres from the users’ homesteads (URT 2002, 2008; Giné and Pérez-Foguet 2008). Village leaders in the study area told us that decisions on the location of the borehole during the initial technical surveys involved key informants, often elderly men. The positioning the DPs at public social services institutions like the dispensary

and the school, was a first priority. Subsequently, input from the village assembly was sought for the positioning of other DPs. However, most households do not attend the village assembly. The survey showed that only 69 (31%) households of the households, represented by mainly male household heads, participated in the discussions on the location of the water points. The presence of women members in the VWC had only a slight influence on the location of the DPs, because the women VWC members are required to give their opinion in the formal decision-making context of the village assembly. Their domestic duties often prevent them from attending and, when they attend; cultural notions about proper female behaviour in public spheres inhibit them from speaking up. Studies in rural Africa and Nepal have likewise established limited participation of women in the designing and planning of public water services (Hemson 2002; Gleitsmann *et al.* 2007; Bhandari and Grant 2009).

Apart from improved sources, Mbori and Kelema Maziwani village have a river that villagers used as an alternative source of water. In Kelema Maziwani village the user fee for a 20-litres bucket of water from the improved source was TSH 25 (about \$US 0.02) and the price of water from the Kelema river was TSH 150 (about \$US 0.10) per bucket of the same size. This suggests that sometimes users are willing to pay extra to get the service that suits their quality preferences. Women were buying water from the river for drinking and laundry purposes. When probing for clarification from the women users and from youth who were selling the river water, it was said: "Water from the river is 'cold' and has a 'sweet' taste; it quenches the thirst quicker than water from improved sources." In addition, women said that they preferred water from the river "because it is very good for laundry as it brightens white clothes and does not cause discolouration to the *vitenge* and *kanga*." Similarly, Cleaver (1998: 350) found in her research that "women have strong preferences for particular types of water for different purposes. The soft water of the sandy riverbeds is favoured for washing best white clothes and for drinking because of its taste." This shows that availability of local alternatives shapes the choices and preferences of the users. In the discussions with village council representatives, it was said that it would have been of great help if the engineer and technicians could have drilled at least one water point at the riverbed. This suggests that water engineers and related professionals need to investigate local knowledge and 'standards' on water quality during the designing phase and that they should integrate these when technically viable.

4.4 Women's representation and role in the village water committees

All nine villages had a VWC with male and female members. Among them, four had a private operator (PO) who was sub-contracted by the village to supply water services under supervision of the VWC. Table 2 shows that all villages, except Potea, had equal numbers of male and female members, as required by the national guidelines (URT, 2002, 2008). The VWC of Potea village had five males and three females because one woman who was elected had to quit the post because of her husband's objections. Major roles of the VWC were to ensure smooth delivery of services and an adequate water flow to all DPs and cattle troughs. In the villages without a PO, the VWC members prepare the water-selling roster and take turns to sell water at the DPs, submitting user fee collections to the VWC treasurer. In the villages with a PO, the VWCs have to supervise the PO and make sure that the PO timely pays the village the amount agreed per month. The VWCs are required to meet once a month and convene extra meetings in case of an emergency such as damaged infrastructure. Apart from Seluka and Sambwa villages, the VWCs in the study area were meeting regularly to discuss the water services.

Some female VWC members mentioned that sometimes they could raise an important point but found it difficult to influence the final decision on the matter by deliberation, especially when the woman raising the point is younger than other VWC members. This reveals the influence of the social-cultural context on decision-making processes in the management of rural water schemes. Cleaver and Hamada (2010) already drew attention to how structures influence voice in terms of hierarchies among women and the constraining norms of proper behaviour for especially younger women, and how this affects women's participation in the formal water governance.

Table 2: Composition and management approach of the village water committees

Village Name	Management Approach	VWC Composition	
		Male	Female
Potea	VWC	5	3
Kelema Maziwani	VWC	7	7
Kidoka	VWC and Private operator	4	4
Sambwa	VWC	6	6
Chase-Chinyika	VWC and Private operator	6	6
Berege	VWC and Private operator	8	8
Seluka	VWC	5	5

Mbori	VWC and Private operator	5	5
Lupeta	VWC	4	4

From the interviews with the Village Executive Officers and VWC representatives, it also became apparent that most of the points on the agendas of VWC meetings were related to technical and managerial aspects, such as repair of a broken-down DP, status of the water infrastructures and management of the water fund account and cash kept by the VWC treasurer. Given the points that dominate the VWC agendas and discussion, it follows that women's PGN emanating from their domestic responsibilities, were hardly discussed. In terms of meeting women's SGN, however, it has to be noted that the affirmative action of having women in the management of public water facilities provides chances for women as well. They gained more exposure to external sources of knowledge and information through interaction with researchers and other visitors visiting the villages for education and developmental work and through training on management aspects, however short. They were also better informed about various opportunities in and outside the village for improving their lives through the discussions during the monthly VWC meetings.

5. CONCLUSION: INTERFACES AND WOMEN'S GENDER ROLES AND NEEDS

By looking at the household-community interfaces, important lessons can be drawn for achieving gender integration in the formal structures of managing rural water services. Women's domestic duties and reproductive and productive roles define their PGN regarding water. Additionally, female household members bear the brunt of the burden of water collection. Kabeer (1994) noted that women family members who are involved in water collection are a human resource; they produce and care for other family members although their service is viewed as non-economic, 'natural', effortless and is mostly overlooked by men and development planners. Therefore, a policy intervention such as women's representation in the VWCs is important for addressing their SGN and could be the starting point for addressing their PGN in terms of the resources and costs incurred to get water from the DP to the house. Spending much time on fetching water inhibits women's participation in community management, which – in turn – prevents their PGN from being met.

The cases presented in this paper demonstrate that placing gender in the formal management structures by having women in the VWCs addresses women SGN to

a certain extent, but does not automatically meet women's PGN. Our results have shown that women's agency in their management role as VWC members is entrenched in the social-cultural structures. Besides, the main points discussed during the VWCs meetings are not inclined to women's household experiences. This implies that the policy aims and actual practices related to women's representation in the VWC are at odds. Moser's (1989) description of women's PGN formulates '*how, why, by whom*' and '*in what context*' questions to place women's gender needs in the concrete conditions women experience in order to respond to immediate perceived necessities identified by women themselves. Linking this to our results, it can be concluded that addressing women's domestic water needs requires a two-way feedback between decision-making at the community level and practices related to water provision and use at household level. Women's domestic water needs should neither be viewed as a 'women's only problem' nor treated in isolation from their SGN. It is important to systematically analyse the interdependence between women's domestic water needs, their involvement in community management, and the bigger picture of gender roles in society (Cf. Alsop 1993; Kabeer 1994; Rao and Kelleher 2005).

The regulations about women's representation in VWCs reflect the recognition of women's key role in household water provision and use. Unfortunately, these women, especially the younger ones, are hardly able to influence VWC decision-making. Theoretically, women have a voice in terms of equal representation, but in practice it is difficult for them to use their voices in the community arena like in the village assembly, because it is considered inappropriate for a woman to be talkative in public. A related issue is the lack of women's voice in the technical sphere. While women relate to water as managers, providers and users to carry out their reproductive roles, water professionals rarely integrate women's knowledge, preferences and perceptions on the appropriateness of the domestic water in the designing and planning phases of water projects.

Nevertheless, we support the affirmative action of women's representation in the management of public water facilities because it expands their exposure to external sources of knowledge, information and increases their awareness on various opportunities in and outside the village. These benefits, either directly or indirectly, give women the chance to become more informed, confident and widen their horizons for different leadership positions.

Our findings may be contested on the ground that households and villages vary and so do their requirements and perceptions of the appropriate domestic water

services. However, our conclusions raise three questions for further research: (i) how are interventions organised to deal with the local context in which women VWC members have to function; (ii) how willing are policy makers and village leaders to challenge the prevailing socio-cultural gender order; and (iii) how do the formal and informal interfaces interact with gender and the management of public water facilities in the rural settings.

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